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# ABSTRACT BOOK

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«Geosciences for the environment,  
natural hazards and cultural heritage»

## Urban geomorphology of Genoa old city (Italy)

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*Urban landscape, Geomorphological mapping, Man-made landforms.*

A multi-year geomorphological surveys of the city of Genoa allowed the creation of an original geomorphological map of the urban environment. The city of Genoa is internationally known for the importance of its port and for the presence of a historic city center recognized as an UNESCO World Heritage since 2006.

The research methodology was based on the structuring and analysis of a multi-source geodatabase consisting of information acquired from scientific literature and technical reports, historical and recent photographs and maps, geological and environmental data related to land planning plans, original data from field surveys. Work phases of data elaboration included: 1) a multi-temporal cartographic comparison from the eighteenth-century to year 2016; 2) an analysis of aerial photographs in the period 1936-2016; 3) the interpretation of boreholes data; 4) both surface and underground geomorphological observations within the city centre, by means of field surveys and speleological techniques.

The recognition of the former geomorphological setting on which the historical nucleus of Genoa has developed, and the interpretation of its paleogeographic, geological and tectonic conditions, are not an easy task: since the High Middle Ages of the Maritime Republic of Genoa, the superposition of multiple phases of urban sprawl has obliterated original geomorphic conditions. However, interpretation of the rich geodatabase allowed to classify landforms, processes and surficial deposits with respect to their original environment and morphogenesis, i.e due to: running waters, gravity, karst, action of the sea; but, above all, due to human activities. In fact, the entire study area has undergone continuous modifications by man through the all considered time interval, as shown by artificial land fillings at the seaside, alteration of the river network, excavations and fills on the slopes, with the highlighting of significant anthropogenic urban landforms.

The geomorphological map support both a morpho-evolutionary and a functional approach to the geomorphological landscape the of Genoa old city: therefore, it can be a useful tool for land planning, also aimed at reducing the geo-hydrological risk that characterizes the urban area.



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